

COMPARISON OF OHIOANS' PERCEPTIONS OF STRIP MINING AND RECLAMATION IN 1970 AND 1975¹

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Abstract. In 1970 and again in 1975, the population of Ohio was sampled to determine how Ohioans felt about strip mining and reclamation in the state. Among the several items provided by respondents participating in the study was their opinion regarding these 2 closely related activities. In addition, the respondents were asked to give a reason for their opinions. In 1970, the proportion of the sample was equally divided between those favorable toward strip mining and those opposed to the activity. About 0.25 of the sample assumed a neutral stand toward the concept. The predominant reason given by those favoring strip mining was their belief that strip mining satisfied a demand for power and fuel. Those opposed to the activity were primarily concerned over the environmental destruction they associated with the activity. In 1975, the proportion favoring strip mining was twice that found in the earlier study. Those assuming a neutral position represented a very small proportion of the population. The same reason for favoring the activity predominated. Positive opinions on reclamation were overwhelming in 1970. However, reasons given by respondents for their opinions varied as they perceived future needs for land. Positive opinions were expressed by an even greater proportion in 1975. Reasons given were the same as in 1970, except that a perception of a current need for land appeared in responses received in 1975. Apparently, opinions on strip mining and reclamation became more polarized over the 5 year period of the study.

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During the summers of 1970 and 1975, the population of Ohio was sampled to determine the attitudes of Ohioans regarding strip mining and reclamation. Interviews were conducted in 54 townships, representing approximately $\frac{1}{3}$ of the townships in 11 counties. The sampling technique and identification of the sample areas have been reported previously (Ray 1973, 1975).

Among the several items of information provided by respondents participating in these studies was a statement of their opinions on strip mining and on the related activity, reclamation of mined-out land. A statement of opinion is regarded as a *cognitive* component of attitude (Fishbein 1967, Mann 1969) revealing the direction of attitudes toward a concept. The direct interview technique used in these studies allowed the reason for each stated opinion to be acquired—i.e., each respondent was asked

to indicate why he or she held the opinion reported. It is the purpose of this paper to report the nature of the opinions of Ohioans regarding the 2 concepts, strip mining and reclamation, and the reasons given for holding these opinions for the 2 periods of time the population was sampled.

DISCUSSION

A summary of the opinions of Ohioans on strip mining in 1970 to 1975 is given in table 1. In 1970, those persons in the sample population who favored strip mining ($n=163$) represented 37.8% of the total while 38.2% ($n=165$) objected to this activity. A neutral stance was assumed by 24.0% ($n=104$). By 1975, the proportion of the population favoring this activity increased to 67.8% ($n=159$), and those objecting had diminished to 22.8% of the total ($n=53$). Only 22 persons (9.4%) declined to give opinions because they believed they were neutral in their feelings about the concept.

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TABLE 1
Opinions of Ohioans on Strip Mining and Reclamation in 1970 and 1975.

Concepts	POSITIVE OPINIONS		NEGATIVE OPINIONS	
	No. respondents	% Total	No. respondents	% Total
<i>1970 (n=432)*</i>				
Strip Mining	163	37.8	165	38.2
Reclamation	408	94.5	2	0.4
<i>1975 (n=234)**</i>				
Strip Mining	159	67.8	53	22.8
Reclamation	231	98.8	2	0.8

*In the 1970 sample, 104 persons (24.0%) declined to express an opinion on strip mining; 22 person had no opinion on reclamation.

**In the 1975 sample, 22 persons (9.4%) declined to express an opinion on strip mining; 1 person had no opinion on reclamation.

From these data, it is clear that opinions on strip mining changed over the 5 year period from 1970 to 1975. During this time, the proportion of Ohioans favoring strip mining nearly doubled, changing from 37.8% of the population in 1970 to 67.8% in 1975.

Those persons objecting to strip mining represented a smaller proportion of the population in 1975 than they did in 1970. The proportions of negative opinions toward the activity decreased from 32.8% in 1970 to only 22.8% in 1975, and the

proportion of the population declining to state an opinion on strip mining declined from 1970 to 1975. These percentages suggest that a polarization of opinions toward the activity occurred over the 5 year period.

Opinions on reclamation showed little change over the 5 year period. In 1970, the proportion of the population favoring reclamation was 94.5% (n=408), and in 1975 it was 98.8% (n=231). Less than 1.0% of the population expressed negative opinions on the concept in both

TABLE 2
Reason for Appeal of Strip Mining Given by Respondents Expressing a Positive Opinion on the Concept in 1970 and 1975.

Stated Reason for Appeal of Strip Mining	1970		1975		Amount & Direction of Change
	No. Respondents	% Total	No. Respondents	% Total	
1. Represents a Wise Use of a Natural Resource.	1	0.6	3	1.9	+1.3
2. Provides Employment for the Local Population.	34	20.9	26	16.4	-4.5
3. Satisfies the Demand for Power and Fuel.	109	66.9	118	74.2	+7.3
4. Produces Revenue for the State.	1	0.6	0	0.0	-0.6
5. Provides Numerous Benefits for the Community.	5	3.1	1	0.6	-2.5
6. The Safest Method for Mining Coal.	6	3.7	3	1.9	-1.8
7. Provides Income for Land-owners and Coal Companies.	3	1.8	1	0.6	-1.2
8. Represents the Best Use for Most of the Land which is Stripped.	2	1.2	0	0.0	-1.2
9. Represents an Efficient, Low-Cost Method of Meeting the Demand for Coal.	2	1.2	7	4.4	+3.2
Totals	163	100.0	159	100.0	0.0

samples, 0.4% (n=2) in 1970 and 0.8% (n=2) in 1975. There was also a polarization of opinions on reclamation over the same 5 year period. In 1970, there were 22 persons (5.0% of the total) declining to offer opinions on the concept; in 1975 only one person (0.4% of the sample) declined to express an opinion.

Table 2 contains a series of 9 statements that summarize the reasons given by respondents for their positive opinions on strip mining. Included is data regarding the proportion of the respondents with positive opinions giving each of the several reasons for their opinions for 1970 and 1975. The amount and direction of the changes in these proportions is also recorded. From these data, it appears that concern for local employment, benefits provided to the community by the industry, and safety in mining coal have declined in importance to the population of Ohio having positive opinions on stripping (Statement Nos. 2, 5, and 6, respectively). In contrast, this population has shown an increased awareness of the demand for power and fuel, the low cost and efficiency of stripping, and the

wise use of a natural resource represented by its extraction (Statements No. 3, 9, and 1, respectively).

Table 3 contains 9 statements that also summarize the reasons given by respondents for their negative opinions toward strip mining. Information is provided regarding the proportion of these respondents giving each of the 9 reasons for their opinions in each of the years the samples were taken, along with the amount and direction of changes in these proportions over the period of study. Interest seems to have waned in the population having negative opinions with regard to the noise, dust, dirt, safety hazards, destruction of natural beauty, and resulting poor condition of land associated with stripping for coal (Statement No. 7, 5, 1, and 2, respectively). Interest has intensified in this population with respect to the belief that stripping causes total destruction of the land, is rarely followed by restoration, and represents a wasteful use of the land resource (Statement No. 4, 3, and 8, respectively).

Table 4 summarizes the reasons given

TABLE 3
Reason for Objection to Strip Mining Given by Respondents Expressing a Negative Opinion on The Concept in 1970 and 1975.

Stated Reason for Objection to Strip Mining	1970		1975		Amount & Direction of Change
	No. Respondents	% Total	No. Respondents	% Total	
1. Destroys the Natural Beauty of the Land.	33	20.0	9	17.0	- 3.0
2. Leaves the Land in a Poor Condition for Any Use.	32	19.4	9	17.0	- 2.4
3. Is Rarely Followed by Restoration of the Land for Future Use.	16	9.7	7	13.2	+ 3.5
4. Causes Total Destruction of the Land—Soil, Water, Vegetation.	48	29.1	21	39.6	+10.5
5. Creates Safety Hazards for People and Wildlife.	6	3.6	0	0.0	- 3.6
6. Leaves the Land in a Useless Condition, Reducing the Local Tax Base.	1	0.6	0	0.0	- 0.6
7. It is a Noisy, Dusty, and Dirty Activity.	10	6.1	0	0.0	- 6.1
8. It Is a Wasteful Use of the Land Resource.	14	8.5	6	11.3	+ 2.8
9. It Destroys Total Communities—House, Farms, Churches, Neighbors.	5	3.0	1	1.9	- 1.1
Totals	165	100.0	53	100.0	0.0

by that portion of the sample population giving positive opinions on reclamation in 1970 and 1975, including the amount and direction of changes in the proportions of this population giving each of these reasons over the 5 year period. The concern of this population for land needs, justifying the reclamation of mined-out land, was very high in 1970 and 1975. Many persons perceived a need for land for specific purposes (Statement No. 6, 7, and 8), but a majority perceived a need for land for a variety of purposes (Statements 3 and 9). The emphasis appears to have shifted, however, from a perception of a future need for land in 1970 to that of a current need for land in 1975. This shift in perception is evidenced by a 19.8% increase in the proportion giving Statement No. 9 as a reason for positive opinions on reclamation in 1975 in contrast to a decline of 11.2% in the proportion giving Statement No. 3 as their reason. Table 5 contains data that suggest some negative feeling about reclamation exists in the

population and gives reasons presented by respondents offering negative opinions toward the concept.

The data on opinions for strip mining and reclamation were collected within several counties in the state to provide a spatial dimension to my studies. Thus, it is possible to examine some locational characteristics of the changes in perceptions associated with the concepts under study. Data for this purpose are not tabulated herein because of their extensive nature. The most significant aspects of these changes are summarized in the discussion that follows.

The greatest change to positive opinions occurred in Coshocton and Harrison counties; however, there were noticeable changes in the reasons given for positive opinions. These changes occurred with the selection of Statement No. 3 (table 2). In 1975, there were 118 persons (74.2% of total) who gave positive opinions on strip mining and identified Statement No. 3 as their reason. In 1970, there were 109 persons (66.9% of total) in

TABLE 4
*Reason for Appeal of Reclaiming Mined-out Land Given by Respondents
Expressing a Positive Opinion on the Concept in 1970-1975.*

Stated Reason for Appeal of Reclamation	1970		1975		Amount & Direction of Change
	No. Respondents	% Total	No. Respondents	% Total	
1. Improves the Appearance (Beauty) of the Land.	127	31.1	84	36.4	+ 5.3
2. Improves the Quality of the Land, Increasing the Local Tax Base.	18	4.4	9	3.9	- 0.5
3. Restores the Land to a Useful Condition for Many Purposes (Sensed Future Land Needs).	111	27.2	37	16.0	-11.2
4. Allows the Land to Return to its Original Condition more Rapidly.	25	6.1	5	2.2	- 3.9
5. A Wise Resource-Use Practice, Reducing Soil Erosion and Flooding.	15	3.7	10	4.3	- 0.6
6. Restores the Land for Agricultural Use.	51	12.5	18	7.8	- 4.7
7. Restores the Land for Recreational Use.	29	7.1	7	3.0	- 4.1
8. Restores the Land for Forestry and Wild-Life Habitats.	14	3.5	5	2.2	- 1.3
9. Satisfies the Need for Useful Land for Many Purposes (Sensed current Land Shortages).	18	4.4	56	24.2	+19.8
Total	408	100.0	231	100.0	0.0

TABLE 5
*Reason for Objection to Reclaiming Mined-Out Land Given by Respondents
 Expressing a Negative Opinion on the Concept in 1970 and 1975.*

Stated Reason for Objection to Reclamation	1970		1975		Amount & Direction of Change
	No. Respondents	% Total	No. Respondents	% Total	
1. It Is a Wasted Effort Because the Land is Useless After Stripping.	1	50.0	1	50.0	0.0
2. It Represents an Unnecessary Cost in the Coal Production Process.	1	50.0	1	50.0	0.0
Totals	2	100.0	2	100.0	0.0

this category. Most of this increase in identification of Statement No. 3 as the reason for their opinions came from respondents in Harrison, Henry, and Jefferson counties. Collectively, these 3 counties provided 32.2% of the sample with positive opinions on strip mining and gave Statement No. 3 as the reason for their opinion. This percentage is in contrast to the collective proportion from these 3 counties in the same category in 1970, which amounted to 19.2%.

The greatest decrease in negative opinions occurred in Coshocton, Henry, Perry, and Pickaway counties, but there were interesting changes in the reasons given for negative opinions. These changes occurred with the selection of Statement No. 4 (table 3). In 1975, of those persons giving negative opinions on strip mining, 39.6% identified Statement No. 4 as their reason, compared to 29.1% in 1970. Most of this increase in the identification of Statement No. 4 came from respondents in Butler, Belmont, Richland, and Henry counties. Collectively, these 4 counties provided 52.4% of the sample with negative opinions on strip mining and gave Statement No. 4 as the reason for their opinion. This percentage is in contrast to the collective proportion from these 4 counties in the same category in 1970, which amounted to only 31.3%.

With respect to opinions on reclamation, those recorded as positive represented more than 90% in both 1970 and 1975. The greatest change to positive opinions on this concept occurred in

Perry and Wyandot counties. More noticeable, however, were the changes in reasons given for holding positive opinions on reclamation. The greatest of these changes was the identification of Statement No. 9 (table 4) as the reason for having a positive opinion of the concept. Belmont, Butler, Coshocton, Harrison, and Pickaway counties joined to provide 60.7% of the sample with positive opinions on reclamation and gave Statement No. 9 as the reason for their opinions. In 1970, only 38.9% of the respondents in this category were in these counties.

In 1970, two respondents with negative opinions were located in Greene and Pickaway counties; in 1975, two other persons holding these opinions were found in Butler and Greene counties.

CONCLUSIONS

Opinions on strip mining in the population of Ohio changed in the 5 year period between 1970 and 1975. Specifically, the proportion of persons with positive opinions in the population nearly doubled, moving from 38.2% in 1970 to 67.8% in 1975. Among the reasons given for their positive opinions (including the one most frequently given) was that strip mining "satisfies the demand for power and fuel." The proportion of respondents giving this reason for their favorable opinion of the concept increased from 66.9% in 1970 to 74.2% in 1975.

The proportion of persons in the population with negative opinions on strip mining decreased from 38.2% in 1970 to

22.8% in 1975. Associated with this decrease in negative opinions about the concept was an associated change in reasons given for these negative opinions. There was a decrease in the level of concern for nuisances associated with the activity—e.g., noise, dirt, dust, and safety hazards. Instead, there was an increase in the level of concern over “total destruction of the land—soil, water, vegetation” perceived to result from strip mining by those with negative opinions on the activity. This reason was given by 39.6% of those persons with negative opinions in 1975 compared to 29.1% in 1970.

The proportion of the population with positive opinions on reclamation was very high in both 1970 and 1975, increasing from 94.5% in 1970 to 98.8% in 1975. Although there appeared to be a continuing perception of a need for land for specific uses such as agriculture, forestry, and recreation, and, therefore, a need for reclamation of mined-out land, there was an obvious concern over sufficient land being available for a variety of uses. These concerns were reflected in statements given as reasons for their opinions by 27.2% of the sample in 1970. These persons believed that reclamation “restores the land to a useful condition for many purposes.” Their statements generally suggested a *future* need for land for a variety of uses. In 1975, however, these persons suggested that reclamation would “satisfy the need for useful land for many purposes,” and their statements generally suggested a *present* need for land for many uses. These persons represented 24.2% of population expressing positive opinions on reclamation.

It was possible to identify those locations (counties) where changes in opinions on strip mining and reclamation were noticeable, and further, to identify the reasons given for these opinions. Increases in the proportions of positive opinions on strip mining were observed in Coshocton and Harrison counties. Changes in the reasons given for these positive opinions were greatest in Harrison, Henry, and Jefferson counties where concern for energy and fuel demands was predominant.

Decreases in the proportion of negative opinions on strip mining were observed in Coshocton, Henry, Perry, and Pickaway counties. Changes in the reason given for their negative opinions were greatest in Butler, Belmont, Richland, and Henry counties. In these counties, concern over the total destruction of the land that they associated with strip mining dominated the thoughts of persons holding negative opinion toward this activity.

My study reveals that the level of support for reclamation of mined-out lands, although very high in 1970, actually increased by 1975. Noticeable increases in positive opinions on the concept occurred in Perry and Wyandot counties. Associated with these positive opinions was a perceived need (immediate in the 1975 population) for land with a variety of uses. This need was in contrast to a perceived future need for land for many uses in the 1970 population.

Over the 5 year period of this study, it appears that an increasing number of persons in Ohio had positive opinions on strip mining. This change in attitude toward the activity was associated with a concern for the demand for energy and fuel. Where negative opinions persisted, concern was identified with a perceived destruction of the land associated with stripping in the minds of those persons continuing to reject the industry. Reclamation was highly valued by nearly all persons, no matter how they reacted to strip mining. Finally, the opinions of Ohioans on strip mining and reclamation became more polarized. The proportion of the population refusing to offer an opinion on strip mining because of an assumed neutral stance decreased noticeably from 1970 to 1975.

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